



## **ENVIRONMENTAL AND RADIO FREQUENCY SAFETY**

The licensee of WCCU is committed to the protection of station personnel and/or tower contractors working in the vicinity of the WCCU antenna, and is committed to reducing power or ceasing operation during times of maintenance of the transmission systems, when necessary, to ensure protection to personnel.

The predicted emissions of WCCU must be considered, in addition to predicted emissions from any other proposed or existing stations at the site. For WCCU, which will operate on television Channel 36 (602-608 MHz), the MPE is 403.33 microwatts per centimeter squared ( $\mu\text{W}/\text{cm}^2$ ) in an “uncontrolled” environment and 2,016.7  $\mu\text{W}/\text{cm}^2$  in a “controlled” environment. The proposed WCCU facility will operate with a maximum ERP of 624 kW from an elliptically polarized directional transmitting antenna with a centerline height of 125 meters above ground level (AGL). Considering a predicted vertical plane relative field factor of 0.300 the WCCU facility is predicted to produce a power density at two meters above ground level of 155.025  $\mu\text{W}/\text{cm}^2$ , which is 38.436% of the FCC guideline value for an “uncontrolled” environment, and 7.687% of the FCC’s guideline value for “controlled” environments. There are no other broadcast facilities that are located at the WCCU site. The total estimated percentage of the ANSI value at the proposed site is only that of WCCU, which is 38.436% of the limit applicable to “uncontrolled” environments, and 7.687% of the limit for “controlled” environments. (See Appendix A)

## SUMMARY OF RADIOFREQUENCY

### RADIATION STUDY

WCCU, Urbana, IL

Channel 36, 624 kW, 114 m HAAT

June, 2017

<u>CALL</u>	<u>SERVICE</u>	<u>CHANNEL</u>	<u>FREQUENCY</u>	<u>POLAR- IZATION</u>	<u>ANTENNA HEIGHT</u>	<u>ERP (kW)</u>	<u>VERT. RELATIVE FIELD FACTOR*</u>	<u>WORST-CASE PREDICTED POWER DENSITY (<math>\mu\text{W}/\text{cm}^2</math>)</u>	<u>FCC UNCONTROLLED LIMIT (<math>\mu\text{W}/\text{cm}^2</math>)</u>	<u>PERCENT OF UNCONTROLLED LIMIT</u>
WCCU**	DT	36	605	H	125	624.000	0.300	124.020	403.33	30.75%
WCCU**	DT	36	605	V	125	156.000	0.300	31.005	403.33	7.69%
<b>TOTAL PERCENTAGE OF FCC GUIDELINE VALUE =</b>										<b>38.44%</b>

\* For television stations a very conservative vertical relative field factor of 0.3 was assumed pursuant to OET Bulletin 65.

\*\* WCCU is specifying elliptical polarization on their post repack channel. The proposed horizontal and vertical effective radiated powers are included separately in the above table.